

ABSTRACT OF THE DISCLOSURE

A fuel pressure regulator including a valve head having a centerline offset from the centerline of a corresponding fuel orifice. The valve head may be offset
5 with respect to the valve seat and orifice, the orifice may be offset within the seat with respect to the head and diaphragm assembly, or the axes of the head and seat may be non-coaxially biased. Because the vector of the valve closing force does not align with the centerline of the valve head and diaphragm assembly, a
10 resulting torque on the valve head keeps the head in a stable, pivoted position at all flow rates. The valve head always makes contact with the valve seat at a predetermined point during regulator operation, eliminating pressure instabilities and noise experienced in prior art pressure regulators.